

FLORIDA PHOSPHATE WHITE PAPER ADDENDUM July 2012

Executive Summary

During the development of the Memorandum of Understanding (MOU), a major paradigm-shift emerged regarding the approach for addressing the Florida phosphate mining sites in CERCLIS. This new approach could result in the "transfer" of responsibility for the entire scope of the phosphate mining sites to the State of Florida, rather than just the TENORM-related issues.

At a meeting among EPA, the State of Florida, and ATSDR, in January 2012, an approach was discussed whereby EPA would not use CERCLA to address the TENORM-related issues at the phosphate mining sites in Florida. Rather, the TENORM issues would be addressed by the Florida Department of Health along with its response to other radiological issues in Florida. This approach was to be memorialized in a MOU and signed by EPA and the State of Florida.

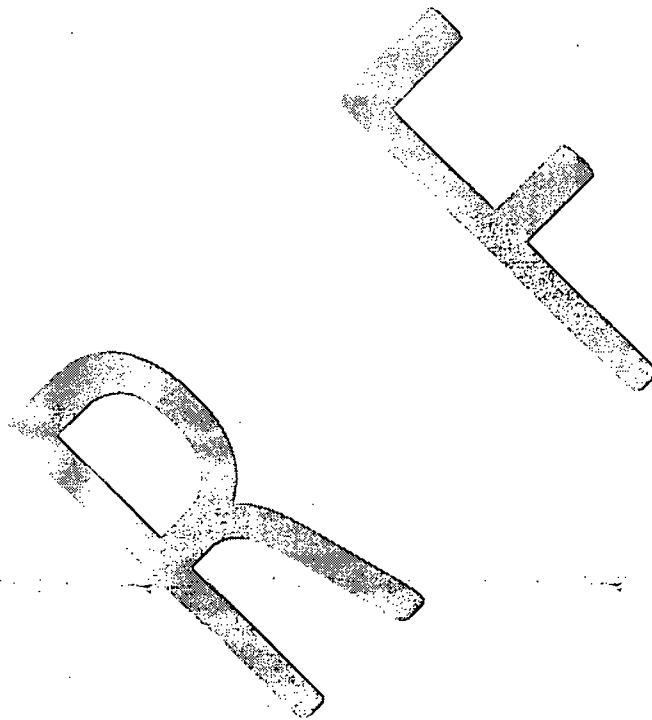
However, during the development of the MOU, significant revisions were made to the MOU by the Region 4, Regional Counsel and the Headquarters Office of General Counsel which greatly simplified the basis for the MOU. Simply stated, because of a need for "consistency" among responses to TENORM issues at the phosphate mining sites in CERCLIS and the other phosphate mining sites for which the State is responsible, TENORM issues at all of the phosphate mining sites would be addressed by the State.

Upon further consideration of the concept of "consistency," the RPM revisited the possibility of the "transfer" of the entire scope of the phosphate mining sites in CERCLIS to the State. It was reasoned that if consistency among responses among phosphate mining sites is important, then why limit the scope to just radiological contaminants? Why should not the State address the entire scope (both radiological and non-radiological) of the phosphate mining sites in CERCLIS along with the other mining sites in Florida?

The "transfer" of the entire sites to the State was formerly considered in the mid-2000's, but rejected because of concern by the State that it could be required to conduct responses using CERCLA-based criteria. Furthermore, the Region was advised at that time by OSRTI, that a "transfer" of this nature could only be documented in CERCLIS as an "other cleanup activity" code. The completion of the OCA-led cleanup would have to be based on a determination by EPA that the cleanup had been completed consistent with CERCLA criteria.



Recent discussions with OSRTI, however, revealed an alternative approach to documenting a final determination in CERCLIS for the phosphate mining sites. Because the State of Florida would take responsibility for addressing the entire scope of the phosphate mining sites, and the agreement memorialized in an MOU between EPA and the State of Florida, there would be no need for further Federal interest in the sites under the Superfund program. A determination of "no further Federal interest" is the fundamental basis for "archiving" a site in CERCLIS. An "archived" status would represent a final decision in CERCLIS. This would reduce the number of active phosphate mining sites in CERCLIS to two.¹



¹ Currently 28 phosphate mining related sites in Florida are listed in CERCLIS. (Due to a formatting error in the spreadsheet used to list the CERCLIS sites, the total was reported at 29. The correct number is 28). There are 19 active sites. Nine had formerly been listed as "archived" or "NFRAP" (but had been planned to be reassessed for radiological contaminants). Among the 19 active sites, there are two sites (Sydney Mine and Coronet Industries) that are actively being managed by EPA under CERCLA. Both of these sites would likely continue to be managed by EPA. The third site, Mulberry Phosphates, was a removal action and would not likely involve any remedial work. The total number of sites currently that have been considered by Region 4 pursuant to the Florida Phosphate Project, could therefore, be reduced from 28 to two.

Background

In January 2012, a White Paper was issued titled "*Solving the TENORM and Florida Phosphate Dilemma*²." The purpose of the paper was to propose a pathway for addressing the 28 phosphate mining related sites in Florida, currently listed in CERCLIS, in a manner mutually acceptable to EPA and the State of Florida. This concept was presented at a meeting on January 26, 2012, among EPA, the Florida Department of Health (FDOH), the Florida Department of Environmental Protection (FDEP), and the Agency for Toxic Substances and Disease Registry (ATSDR).

The premise of the concept was that because the State of Florida maintains regulations designed to protect human health with regard to exposure to elevated levels of radiation, use of CERCLA authority by EPA was not needed to address the TENORM issues associated with the phosphate mining sites. TENORM issues at phosphate mining sites would be addressed by FDOH through its radiation protection program and EPA would address any non-radiation related issues at the remaining CERCLIS sites.

A draft Memorandum of Understanding (MOU) was prepared in March 2012 to memorialize the agreement between EPA and the State of Florida. Because of the different approaches to radiation protection used by EPA and the State, the MOU was drafted in a way so that it was clear that the State of Florida would be responsible for determining the criteria and actions needed to ensure an appropriate level of protection from TENORM exposure from phosphate mining sites. EPA would no longer investigate radiation related issues at phosphate mining sites in Florida, and would record final decisions (i.e., no further remedial action planned (NFRAP)) in CERCLIS based solely on non-radiological issues.

However, as the draft MOU was revised based on comments from the Region 4, Office of Regional Counsel and the Headquarters Office of General Counsel, the radiological versus non-radiological distinction was less apparent. The last version of the MOU³ establishes an agreement between EPA and the State of Florida, based on a need for "consistency" among the sites in CERCLIS and the other phosphate mining sites being addressed by the State. The MOU explains that because of the need for consistency with other phosphate mining sites in the State of Florida, and because the State maintains a regulatory program that can address TENORM issues at phosphate mining sites, the State of Florida will address TENORM related issues at the phosphate mining sites in Florida.

² Solving the TENORM and Florida Phosphate Dilemma – A White Paper. Prepared by Brad Jackson, EPA R4 Superfund Division, January 2012. (The paper was subsequently revised in March 2012).

³ As of the preparation of this Addendum, the last draft of the MOU was based on comments provided by Leif Palmer, ORC, to Carol Monell, via email dated June 15, 2012.

The need for "consistency" among programs is a valid concept and was previously explored with the State of Florida in the mid-2000's. The Superfund Division Director discussed with the FDEP Director of the Division of Waste Management the possibility of "transferring"⁴ all of the phosphate mining related sites back to FDEP to address along with their other sites. The FDEP Director, however, was concerned with the possibility of putting the Department in a position whereby it would be required to address the phosphate sites using CERCLA criteria.

At the time the possible transfer was discussed, the only mechanism identified through discussions with the Office of Superfund Remediation and Technology Innovation (OSRTI) was to code the sites in CERCLIS as "Other Cleanup Activity" (OCA). This would effectively transfer the phosphate sites to the State for response. However, the OCA accomplishment definition in the Superfund Program Implementation Manual (SPIM) is the notification of EPA that the cleanup has been conducted in accordance with all appropriate standards or is referred back to EPA for response. Once a cleanup has been completed under OCA, it is eligible for designation in CERCLIS as NFRAP.

The OCA approach, however, would create the very situation that the FDEP Director wanted to avoid. Discussions with OSRTI program staff confirmed that the concept of another authority conducting a cleanup would need to achieve the same level of protectiveness as would a CERCLA response. Also confirmed was that EPA would use CERCLA based criteria to evaluate the adequacy of an OCA-based cleanup. It was, therefore, concluded in the mid-2000's that a State-led response of the CERCLIS sites would not address the issue of different criteria between EPA and the State with respect to TENORM.

It was not until the development of the White Paper in January 2012 that the possibility of a State-led response to the TENORM issues at the phosphate mining sites in Florida was re-examined. The goal of the White Paper was to develop an approach that allowed the State to address the TENORM issues, while not putting the State in a position where it was not obligated to address TENORM using CERCLA-based criteria, or where EPA would need to evaluate the State's actions using CERCLA-based criteria to reach a final decision.

The approach developed in the White Paper was twofold. It acknowledged the need for a response that was not only protective of public health, but also maintained a proper balance of cost and socio-economic considerations. It also noted that while EPA has the authority to respond to TENORM under CERCLA, the Agency was not obligated to undertake a CERCLA-based response. The paper further noted that the State of Florida has promulgated regulations designed to protect the public from exposure to

⁴ The term "transferring" has no regulatory implication. It simply means the State would address the sites. The appropriate mechanism for the transfer is the subject of this paper, and is discussed further herein.

elevated levels of radiation, and therefore, could address potential exposures to TENORM along with the other radiation related matters it regulates.

This approach would have the effect of "transferring" the responsibility of TENORM related issues at phosphate mining sites in Florida to the State. EPA would then be in a position to then focus on any remaining non-TENORM related issues at the phosphate mining sites in CERCLIS. EPA would evaluate and document the need for further action, or no further action, base only on non-TENORM related contaminants. This approach was discussed and supported at the January 26, 2012, meeting and later formed the basis of the initial draft of the MOU.

As previously noted, however, revisions of the MOU by the Regional Counsel and OGC took a more "straightforward" approach and reasoned that the State should address the TENORM issues at the 28 phosphate mining sites in Florida out of a need for "consistency" with the way it addresses other phosphate mining sites. The following is a review and discussion of how a "consistency-based" approach could be incorporated in to the MOU and applied to the entire scope of the sites, not just TENORM-related issues.

Discussion

First and foremost, it is critical that the State of Florida not be put in a position where it is obligated to address TENORM related issues at phosphate mining sites using CERCLA-based criteria. It is also critical that EPA be able to advance the progress of the 28 phosphate mining related sites such that a final decision can be reached in CERCLIS. While the need for "consistency" is straightforward and easily understood, it is potentially problematic because it could create issues in achieving the above-stated goals of the MOU.

The first issue is that if there is a need for "consistency," why limit the consistency aspect to just TENORM? Would not the need for consistency apply to the entire phosphate mining site? If so, the entire phosphate mining site would be addressed by the State of Florida pursuant to the State's regulations. The response at these sites would be consistent with the manner that the State addresses other phosphate mining related sites in Florida. Secondly, while transferring the entire scope of the 28 phosphate mining sites to the State would be a good idea, and was previously discussed between EPA and FDEP, the potential issue is how the final disposition of these sites would be documented in CERCLIS.

Discussion of Consistency

With respect to the matter of "consistency," there are multiple factors that would support a transfer of responsibility for the majority⁵ of the phosphate mining related sites to the State of Florida:

- The State of Florida has many more phosphate mining related responsibilities than EPA. Phosphate mining in Florida is much broader in scope than just the 28 phosphate mining sites listed in CERCLIS. The phosphate deposit in west-central Florida is approximately 2500 square miles (mi²) in size. About 900 mi² has been mined, of which the CERCLIS sites include 337 mi² or 37%. The majority of the phosphate mined land is currently under the supervision of the State of Florida. A little over one-third of the phosphate deposit has been mined, and mining continues at a rate of about 5000 acres (≈ 8 mi²) per year. The size of the State of Florida's area of responsibility will only continue to increase each year relative to the scope of the phosphate mining sites in CERCLIS.
- Phosphate mining in Florida involves multiple resources within the State. The State has implemented regulations to protect human health and the environment associated with phosphate mining activities. These regulations pertain to environmental resource protection; mandatory phosphate mine reclamation; non-mandatory mine reclamation; phosphogypsum management; dam safety; and mine

⁵ See footnote 1.

safety. Also promulgated are radiation protection programs designed to protect the public from exposure to elevated levels of radiation. Risk-based corrective action regulations can also be applied to address non-TENORM contaminants.⁶

- It is unlikely that EPA consulted the State of Florida in determining whether a large group of phosphate mining sites should be addressed under CERCLA. If the State had been consulted, it is questionable whether the State would have concurred with addressing some of the phosphate mines under CERCLA. The following are some key factors:

1. Twenty-four of the Florida phosphate mining sites have discovery dates prior to the enactment of CERCLA on December 11, 1980 (six from October 1979; 15 from November 1979; one from March 1980; and two from August 1980). These sites were "discovered" before the enactment of CERCLA and were not "discovered" and entered into CERCLIS using discovery process described in the SPIM. The current discovery process defined in the SPIM contemplates a site being "discovered" and included in CERCLIS based on a "citizen petition," "referral from removal or RCRA," or "referral from states."
2. Research suggests that many of these sites were identified as a result of a national survey in the late 1970's sponsored by Congressman Robert Eckhardt. The United States Congress, Committee on Interstate and Foreign Commerce, Subcommittee on Oversight and Investigation, issued a report in October 1979, titled *Waste Disposal Site Survey Report* (commonly referred to as the "Eckhardt Report"). This report sent surveys to some of the largest companies in the US requesting that the companies provide information regarding how and where hazardous waste are managed. For the most part, the phosphate mining companies listed in the October 1979 report, are the same companies with discovery dates of October and November 1979⁷.
3. At the time of the 1979 "Eckhardt Report", the EPA Administrator and the Florida Governor had been in communication for several years regarding radon related issues at phosphate mining land in Florida. It seems unlikely, that on one hand EPA and the State of Florida would have been working cooperatively on phosphate mining and radiation related issues since the mid-1970's, but on the other hand decide to include the phosphate mining related sites in a new federal environmental program (i.e., CERCLA) without any

⁶ Applicable State regulations include Florida Administrative Code 62-330; 62C-16; 62-672; 62C-17; 62-673; 62-671; and 62-780. Also included would be Florida Statute 404.056.

⁷ The exact relationship of the "Eckhardt Report" and inventory of sites under CERCLA is unclear. It is surmised from a comparison of notification dates in the Eckhardt Report and discovery dates in CERCLIS that many of the sites identified from the Eckhardt survey were used (at least in part) to generate the initial database of sites to be investigated under CERCLA. A review of discovery dates in CERCLIS, indicate that over 600 of the sites in Region 4 have discovery dates before the enactment of CERCLA in 1980. Some of the discovery dates, however, are from before the Eckhardt survey, suggesting that they may have been part of an inventory of hazardous wastes sites developed pursuant to RCRA 3012 (Hazardous Waste Site Inventory).

apparent deliberation and documentation of the decision. Rather, it appears that the phosphate mining and radon related discussions were conducted without the knowledge that many of the Florida mining sites were included in the Eckhardt Report and would be included in a database of sites to be investigated under CERCLA. Listed below are some key events that illustrate the active nature of the work in the mid- to late-1970's by EPA and the State of Florida in an effort to address phosphate mining and radiation related issues:

- June 1975, EPA and the State of Florida begin a joint assessment of the potential risks to human health from living on formerly mined land.
 - July 1975, regulations are promulgated by the State of Florida that required reclamation of land mined after July 1, 1975.
 - September 1975, EPA informs the Governor by letter that there is evidence of elevated levels of radon in buildings constructed on formerly mined phosphate land. Discussions are held among federal, state and local agencies to discuss results and measures to mitigate potential risks.
 - June 1976, EPA publishes notice in Federal Register summarizing recommendations to the Florida Governor for limiting exposures to elevated levels of indoor radon.
 - March 1978, the Florida Phosphate Land Reclamation Commission issues report to Governor, President of State Senate, and Speaker of the State House of Representatives. Report provides assessment of phosphate mining related issues and recommendations.
 - February 1979, EPA Office of Radiation issues report titled "*Indoor Radiation Exposure to Radium-226 in Florida Phosphate Lands.*" Report reviews nature and scope of radiation and radon exposure associated with formerly mined phosphate land in Florida. The report also includes recommendations for mitigating risks to human health.
 - July 1979, EPA publishes notice in Federal Register regarding the Agency's communication with the Governor and recommendations for controlling indoor exposure to radon and gamma radiation.
 - December 1980, as part of a separate process, however, a new federal law is to address uncontrolled hazardous waste sites (i.e., CERCLA). The bill was first introduced in the House of Representatives on April 2, 1980, as the Hazardous Waste Contaminant Act.
4. The EPA Administrator and Florida Governor had been working collectively on the phosphate mining and radiation issues for at least five years before the enactment of CERCLA. Had it been realized that issues were being investigated and programs developed to address the phosphate mining related sites in Florida that were identified in the Eckhardt Report, the Florida phosphate mining sites may never have been included in the initial database of CERCLA sites.

In summary of the matter of "consistency," it is evident that the State of Florida has been actively working on phosphate mining related issues in Florida, since the 1970's. From a review of a web site for the FDEP, Bureau of Mines and Land Reclamation⁸, it is evident that the State will continue to be actively engage in managing phosphate mining related issues well into the foreseeable future. It is also evident, that the scope of responsibility is well beyond the scope of phosphate mining sites listed in CERCLIS.

Designation of Site-Completion in CERCLIS

With regard to the matter of documenting the final disposition of the Florida phosphate mining related sites in CERCLIS, a new approach has developed since the initial discussions with OSRTI in the mid-2000's. As previously noted, OSRTI had advised that the Florida phosphate mining sites could not be removed from CERCLIS, and that the only mechanism to "transfer" them to the State of Florida would be through an OCA designation. However, upon further discussions with OSRTI in June 2012, the feasibility of an "archive" designation was considered⁹.

The 2012 SPIM defines an "archived" site as a site where EPA has "no further federal interest." According to the SPIM 2012, the "archived" site designation represents a site-wide decision that "no further interest exists at the site under the Federal Superfund Program." Although several categories of archived sites are listed in the SPIM, the manual states that "the underlying basis for archiving a CERCLIS site is whether or not federal Superfund interest exists." To receive credit for the archival, an explanation that no that no further federal interest must be placed in the site file and the "Archive Indicator" field checked and the archived date recorded.

In this case, an MOU that transfers the entire scope (i.e., radiological and non-radiological) of the phosphate mining site to the State could serve to document that there is no further federal interest in the site. This approach would both allow EPA to achieve a final determination for the phosphate mining related sites, as well as, allowing the State to address the CERCLIS sites consistent with its management of other phosphate sites in Florida. Because there would be no further federal interest, there would be no reassessment of the sites by EPA using CERCLA-based criteria. This would effectively conclude the "Florida Phosphate Project" and reduce the number of active phosphate mining sites in Florida from 28 to two¹⁰.

Finally, because there would be no requirement by the State for an assessment of these sites using CERCLA-based criteria, it is anticipated that the State would support a "no further Federal interest designation."

⁸ <http://www.dep.state.fl.us/water/mines/index.htm>

⁹ Personal communication between Brad Jackson, EPA R4, RPM and Randy Hippen, OSRTI on June 18, 2012.

¹⁰ See footnote 1.

Conclusion

This Addendum to the 2012 White Paper presents a significant expansion in the scope of thinking regarding the approach for solving the phosphate mining and TENORM dilemma in Florida. The 2012 White Paper presented a case for the transfer of the radiological response of the phosphate mining sites to the State of Florida. This addendum, however, has expanded the approach to include a transfer of the entire site, including both radiological and non-radiological contaminants.

As discussed above, a strong case can be made for "consistency" reasons, that the phosphate mining sites in Florida should be addressed by the State of Florida. The MOU could form the basis of EPA's determination of "no further Federal interest." EPA could then denote in CERCLIS that the entire site (both radiological and non-radiological contaminants) sites have been archived.

This transfer could accomplish a final determination in CERCLIS for the majority of Florida phosphate mining sites. With the exception of two sites, all of the 28 sites that have been part of the "Florida Phosphate Project" would be placed in a final determination status in CERCLIS. This would finally address questions raised by the General Accounting Office (GAO) in 1998 regarding the lack of progress at sites with "unaddressed risks" for 26 of the phosphate mining related sites in CERCLIS. It would also conclude the Florida Phosphate Project.